

AUG 24 1948

WOODS HOLE, MASS.

PROCEEDINGS

OF THE

CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

VOL. XXIII, No. 41, pp. 603-609

SEPTEMBER 15, 1947

No. 41

THE ODONATE COLLECTIONS OF THE CALIFORNIA ACADEMY
OF SCIENCES FROM BAJA CALIFORNIA AND
TEPIC, MEXICO, OF 1889-1894

BY

PHILIP P. CALVERT

Cheyney, Pennsylvania

From 1889 to November, 1894, expeditions of the California Academy of Sciences made collections of Odonata in Baja California and in Tepic, Mexico, totalling more than 3100 specimens. These were listed and described by me in two papers published in the Proceedings of the California Academy of Sciences: "The Odonata of Baja California" (Proc. Calif. Acad. Sci. (2) 4:463-558, pls. xv-xvii, 1895) and "Odonata from Tepic, Mexico, with Supplementary Notes on those of Baja California" (Proc. Calif. Acad. Sci. (3) Zool. 1 (12):371-418, pl. xxv, May 22, 1899). By far the larger part of the material from Baja California on which the former paper was based was, according to letters in my possession, returned to the California Academy of Sciences in 1894, others later. Not all, however, for as I was working in 1899 on the Odonate part of the *Biologia Centrali-Americana*, I was given permission by the authorities of the Academy to retain for a time types and some other material to assist me in the preparation of the *Biologia*. This task was completed in 1908-09. In the meantime, the disastrous fire of 1906 destroyed, as I understand, all the Odonate material which I had returned to the Academy.

In view of the probability that students of the Odonata may have assumed that *all* of these collections were destroyed, I have prepared the present paper to indicate for each species listed in the two papers of 1895 and 1899 (a) the total number of specimens originally listed, (b) the specimens now in the California Academy's possession, and (c) the

duplicate specimens allotted to me under Dr. Gustav Eisen's original proposal of January 25, 1893, when he suggested that I undertake the study of this material. The specimens of lot *c* have been placed in the collections of the Academy of Natural Sciences of Philadelphia, except that, where possible, some have been sent to the California Academy of Sciences to take the place of those destroyed in 1906 and are here included in lot *b*.

In the following lists, therefore, the first numbers for each species are *a* as above, the second *b*, the third *c*. The difference between *a* and (*b*+*c*) represents the numbers lost in the conflagration of 1906. Immediately following the name of each species and its describer's name (or, if new, the abbreviation 'n. sp.') is a reference to the page number in my papers of 1895 and 1899 respectively.

In 1895 and 1899 it was not a universal custom to specify the type specimens of new species and none were designated in these two papers. In this present one I, therefore, fix lectotypes¹ for some of the species.

I. Odonata from Baja California (Proc. Calif. Acad. Sci. (2) 4 : 463-558, Feb., 1895).

1. *Heterina californica* Hagen, p. 473. (a) 3♂, 2♀; (b) 0; (c) 0.
2. *Archilestes grandis* Rambur, p. 475. (a) 36♂, 26♀; (b) 4♂, 3♀; San José del Cabo, Oct., '93; (c) 2♂, 2♀, same locality and date.
3. *Argia agrioides* (Selys MS.) new species, p. 476. (a) 48♂, 26♀; (b) 2♂, 1♀, Baja Purissima, April, '89, 4♂, 2♀, San José del Cabo, May, '93; (c) 2♂, B. P. 2♂, 2♀, S. J. d. C., same dates respectively. None of the material of this species is listed in my paper of 1895 as from San José del Cabo in May, 1893; perhaps these so labeled now are of the lot listed there as "not dated"; I cannot account for the discrepancy in date. I fix one of the Baja Purissima males in the California Academy of Sciences, which bears my label "Original of pl. xv, fig. 14, Proc. Calif. Ac. Sci. (2) iv" as the lectotype (C. A. S. No. 5595) of *Argia agrioides*. The female from the same locality lacks abdominal segments 5-10 and I therefore fix one of the females from San José del Cabo, in the California Academy of Sciences as the lectallotype (C. A. S. No. 5596).
4. *Argia vivida* (Hagen) Selys, p. 478. (a) 9♂, 6♀; (b) 1♂ Baja Purissima, April, '89; (c) 2♂ same locality and date.
5. *Argia cupræa* Hagen, p. 479. [Redescribed as *Argia tezpi* Calvert, Biol. Centr.-Amer. Neur. 77, 1902.] (a) 13♂, 13♀; (b) 2♂, 1♀ San José del Cabo, Oct., '93, 1♂, 1♀ Miraflores, Sept., '94; (c) 1♂, 1♀ S. J. d. C., 1♂ Miraflores, same dates respectively. The type of *tezpi* (C. A. S. No. 5597) was specified in the Introduction to the same Biologia volume, p. xxix, as San José del Cabo, coll. Acad. Sci., and with a female lectallotype (C. A. S. No. 5598) is included in the second group of numbers above.
6. *Argia œnea* (Hagen) Selys, p. 481. (a) 7♂; (b) 1♂, 1♀ San José del Cabo, Oct., '93; (c) 1♂, 1♀ same locality and date, 1♀ Miraflores, Sept., '94.
7. *Erythrargion salvum* Hagen, p. 483. (a) 83♂, 27♀; (b) 5♂, 3♀

¹ In the sense employed by Cresson, Ent. News 45:124, 1934.

San José del Cabo; (c) 5♂, 2♀ same. Four males from the original lot of "salvum" have been found to be *incolumis* Williamson²; two of them are in the California Academy of Sciences, two in the Academy of Natural Sciences of Philadelphia.

8. *Enallagma cæcum* Hagen, p. 485. (a) 20♂, 5♀; (b) 5♂ San José del Cabo, not dated; (c) 6♂, 1♀ same.

9. *Enallagma eiseni* n. sp., p. 486. (a) 17♂; (b) 1♂ Baja Purissima, April, '89, 1♂ Sierra San Lazaro, Sept., '94, 1♂ Mesa Verde, Oct., '93; (c) 2♂ (heads lost) Baja Purissima, April, '89, 1♂ Sierra San Lazaro, Sept., '94. I here designate 1♂ Baja Purissima in the California Academy of Sciences (C. A. S. 5599) as the lectotype of this species.

10. *Ischnura ramburii* Selys, var. *credula* Hagen, p. 489. (a) 10♂, 17♀; (b) 2♂, 1♀ San José del Cabo, not dated, 3 orange ♀ id., Sept., '93; (c) 3♂, 1♀, 3 orange ♀ same locality, the last three Sept., '93³.

11. *Ischnura exstriata* n. sp., p. 493. [= *I. denticollis* (Burm.)] (a) 4♂; (b) 0; (c) 0. All the Baja California examples presumably having been destroyed, I hereby designate as the lectotype of *I. exstriata* a male from "San Bernardino, Calif., Feb.-Mar., 1892, P. C. Truman, Fig. 2, pl. XV, Proc. Calif. Ac. Sci. (2) IV made from this ♂. P. P. Calvert" now in the collection of the Academy of Natural Sciences of Philadelphia.

12. *Ischnura cervula* Selys, p. 497. (a) 3♂, 1♀; (b) 0; (c) 0.

13. *Progomphus obscurus* Rambur, p. 499. (a) 7♂, 6♀; (b) 1♂, 1♀ San José del Cabo, (♂ Sept., ♀ Oct.); (c) Sierra El Taste, Sept., '93, 1♀ San José del Cabo, Oct., '93.

14. *Octogomphus specularis* (Hagen) Selys, p. 502. (a) 1♀; (b) 0; (c) 0.

15. *Aeschna luteipennis* Burmeister, p. 503. (a) 3♂; (b) 0; (c) 1♂ Mesa Verde, Oct., '93, paratype of *Ae. l. peninsularis* Calvert, Ann. Ent. Soc. Amer. 34 (2) : 395, 1941.

16. *Aeschna cornigera* Brauer, p. 507. (a) 3♂, 1♀; (b) 0; (c) 1♂ San Raymundo, April, '89.

17. *Aeschna multicolor* Hagen, p. 505. (a) 21♂, 3♀; (b) 3♂ San José del Cabo, Oct., '93; (c) 3♂, 1♀ same locality and date.

18. *Aeschna constricta* Say, p. 509. [= *Ae. palmata* Hagen var?] (a) 17♂; (b) 2♂ La Chuparosa, Oct., '93; (c) 3♂ same locality and date.

19. *Anax junius* Drury, p. 509. (a) 82♂, 37♀; (b) 4♂ San José del Cabo, Oct., '93; (c) 5♂, 1♀ same locality and date.

20. *Anax walsinghami* McLachlan, p. 510. (a) 31♂, 7♀; (b) 4♂, 1♀ San José del Cabo, Oct., '93; (c) 3♂, 1♀ same locality and date, 1♂ Coral de Piedras, Sept., '93.

21. *Pantala flavescens* Fabricius, p. 512. (a) 17♂, 2♀; (b) 0; (c) 1♂ José del Cabo, Oct., '93.

22. *Pantala hymenæa* Say, p. 512. (a) 15♂, 15♀; (b) 1♂, 1♀ San José del Cabo, Oct., '93; (c) 3♂, 1♀ same locality and date.

23. *Tramea onusta* Hagen, p. 513. (a) 25♂, 3♀; (b) 1♂ Miraflores,

² Occas. Papers Mus. Zool. Univ. Mich. 216:1, 1930.

³ The paper on Odonata of Baja California contains the description of a new species, *Ischnura? erratica*, from California and Washington, page 491. I take this opportunity to designate as its lectotype and allotype respectively the male and female from Mendocino County, California (Amer. Ent. Soc. coll.), now in the Academy of Natural Sciences of Philadelphia; the male is Type No. 9223 and bears a label "fig. 1, pl. XV, Proc. Cal. Ac. Sci. (2) IV, drawn from this ♂ P. P. Calvert."

Sept., '94, 1♂ San José del Cabo, Oct., '93; (c) 3♂ S. J. d. C., Oct., '93.

24. *Tramea longicauda* Brauer? var., p. 514. (a) 2♂; (b) 0; (c) 1♂ San José del Cabo, Oct., '93.

25. *Libellula saturata* Uhler, p. 516. (a) 79♂, 5♀; (b) 7♂, 1♀ San José del Cabo, Oct., '93 (one of these males is *croceipennis* Selys, another is intermediate between *saturata* and *croceipennis*; (c) 8♂, 2♀ same locality and date (one of these males is *croceipennis* Selys, another is intermediate between *saturata* and *croceipennis*. See Biol. Centr. Amer. Neur., pp. 211, 212, 1905.).

26. *Pseudoleon superbus* Hagen, p. 518. (a) 54♂, 18♀; (b) 1♂ Comondu, Mar., '93, 3♂, 2♀ San José del Cabo, Oct., '93; (c) 3♂, 2♀ S. J. d. C. (1♂ Sept., the other three Oct., '93).

27. *Orthemis ferruginea* Fabricius, p. 520. (a) 438♂, 237♀; (b) 8♂, 1♀ San José del Cabo (1♂, 1♀ Oct., '93, the other 7♂ not dated); (c) 9♂, 1♀ same locality (1♂, 1♀ Oct., '93, the other 8♂ not dated).

28. *Dythemis sterilis* Hagen, p. 522. 323♂, 253♀ (+ 17♂ on page 525); 4♂, 2♀ Sept., '94, 1♂, 1♀ Oct., '93, 1♂, 1♀ not dated (+ 2 Oct., '93); 6♂ Sept., '93, 1♂, 1♀ Oct., '93, 1♂, 2♀ not dated (+ 3♂ Oct., '93), all San José del Cabo. The numbers enclosed in parentheses are of the lot of 17♂ described on p. 525 and are paratypes of var. *nigrescens*; see under No. 26 of the Tepic paper cited below.

29. *Dythemis russata* (Hagen MS.) n. sp., p. 526 [= *Paltothemis lineatipes* Karsch]. (a) 12♂, 3♀; (b) 1♂, 1♀ Sierra Laguna, Oct., '93, 1♂ Sierra San Lazaro, Sept., '94; (c) 2♂, one from each of the same localities and dates. I hereby designate the Sierra Laguna male and female in the California Academy of Sciences as the lectotype (C. A. S. No. 5600) and lectallotype (C. A. S. No. 5601) respectively of *russata*.

30. *Dythemis mendax* Hagen, p. 529. (a) 2♂, 2♀; (b) 0; (c) 1♂, 1♀ San José del Cabo, Sept. and Oct., '93, respectively.

31. *Macrothemis imitans* Karsch, p. 531. [= *M. pseudimitans* Calvert, Proc. Bost. Soc. Nat. Hist. 28 (12) : 329, 1898, and see under No. 29 of the Tepic paper, postea.] (a) 8♂, 3♀; (b) 1♂, 1♀ San José del Cabo, Oct., '93; (c) 2♂ same locality and date. I hereby designate the male and female in the California Academy of Sciences as the lectotype (C. A. S. No. 5602) and lectallotype (C. A. S. No. 5603) respectively of *M. pseudimitans*.

32. *Macrothemis inequiunguis* n. sp., p. 533. (a) 20♂, 8♀; (b) 1♂, 1♀ San José del Cabo, Sept., '93, 1♂ Miraflores, Sept., '94; (c) 3♂, 1♀ San José del Cabo, Sept., '93 (♀ not dated), 1♂ Miraflores, Sept., '94. I hereby designate the male and female from San José del Cabo, Sept., '93, in the California Academy of Sciences as the lectotype (C. A. S. No. 5604) and lectallotype (C. A. S. No. 5605) respectively of this species.

33. *Trithemis basifusca* n. sp., p. 536. (a) 101♂, 38♀; (b) 3♂, 2♀ San José del Cabo, Oct., '93; (c) 6♂, 3♀ same. I hereby designate a male and a female in the California Academy of Sciences as the lectotype (C. A. S. No. 5606) and lectallotype (C. A. S. No. 5607) respectively of this species.

34. *Micrathyria didyma* Selys, p. 539. (a) 4♂; (b) 0; (c) 0.

35. *Micrathyria hagenii* Kirby, p. 540. (a) 144♂, 26♀; (b) 8♂, 2♀ San José del Cabo, Oct., '93; (c) 9♂, 2♀ same.

36. *Microthyria aequalis* Hagen, p. 543. (a) 12♂, 2♀; (b) 2♂ San José del Cabo, Sept., '93, 1♂ Miraflores, Sept., '94; (c) 2♂, 1♀ San José del Cabo, Sept., '93.

37. *Diplax corrupta* Hagen, p. 545. (a) 33♂, 21♀; (b) 4♂ San José del Cabo, Oct., '93; (c) 4♂, 1♀ same locality and date.

38. *Diplax illota* Hagen, p. 545. (a) 13♂, 1♀; (b) 2♂ Mesa Verde, Oct., '93; (c) 3♂ same locality and date.

39. *Cannacria furcata* Hagen, p. 548. (a) 6♂, 1♀; (b) 0; (c) 1♂ San José del Cabo, Oct., '93.

40. *Mesothemis simplicicollis* Say, var. *collocata* Hagen, p. 552. (a) 60♂, 10♀; (b) 2♂ Miraflores, Sept., '94, 1♀, 2♀ San José del Cabo, Oct., '93; (c) 2♂ and 2♂, 1♀ from the same respective localities and dates.

Not numbered, not listed: *Pachydiplax longipennis* Burmeister. 1♀ San José del Cabo, Oct., '93, in the California Academy, recorded in Biol. Centr.-Amer. Neur. 341, 1907.

II. Odonata from Tepic, Mexico (Proc. Calif. Acad. Sci. (3) Zool. 1 (12): 371-418, May 22, 1899).

Except where otherwise stated, the following specimens are from Tepic.

1. *Heterina americana* Fabricius, p. 372. (a) 45♂, 32♀; (b) 5♂, 6♀ Oct., '94; (c) 7♂, 7♀ same date.

2. *Archilestes grandis* Rambur, p. 374. (a) 3♂, 2♀; (b) 0; (c) 0.

3. *Lestes tenuatus* Rambur, p. 376. (a) 6♂, 14♀; (b) 2♀ Oct., '94; (c) 1♂, 2♀ same date.

4. *Mecistogaster ornatus* Rambur, p. 377. (a) 2♂; (b) 1♂ Barranca Blanca, Tepic, Nov., '94; (c) 1♂ same locality and date.

5. *Argia harknessi* sp. nov., p. 378. (a) 5♂, 1♀; (b) 1♂, 1♀ Oct., '94, 2♂ Nov., '94; (c) 2♂ Nov., '94. The type of this species was given as from Tepic in Biol. Centr.-Amer. Neur., explanation of pl. IV, fig. 45; to make the designation more precise, I hereby designate the male and female from Tepic, Oct., '94, in the California Academy of Sciences as lectotype (C. A. S. No. 5608) and lectallotype (C. A. S. No. 5609) respectively of this species.

6. *Argia extranea* Hagen, p. 380. (a) 2♂; (b) 1♂ Oct., '94; (c) 1♂ same date.

7. *Argia fissa* Selys, p. 381. (a) 2♂; (b) 1♂ Oct., '94; (c) 1♂ same date.

8. *Argia pulla* Selys, p. 383. (a) 43♂, 25♀; (b) 7♂ Oct., '94; (c) 7♂ same date. One male, eight females of lot (a), Tepic, Oct., '94, prove to be *Argia frequentula* Calvert, Biol. Centr.-Amer. Neur. 364, 365, 1907, although not listed there; 1♂, 4♀ in California Academy of Sciences, the remaining 4♀ in Academy of Natural Sciences of Philadelphia.

9. *Erythrargion salvum* Hagen, p. 383. (a) 8♂, 3♀; (b) 0; (c) 0.

10. *Ischnura ramburii* Selys, var. *credula* Hagen, p. 384. (a) 3♂, 1♀; (b) 0; (c) 0. There are 2 orange ♀ Tepic, Oct., '94, in the California Academy of Sciences, not listed in the paper of 1899.

11. *Gomphoides pacifica* Selys, p. 384. (a) 1♂, 1♀; (b) 0; (c) 0.

12. *Gomphoides suasa* Selys, p. 384. (a) 1♀; (b) 0; (c) 0.

13. *Cyclophylla elongata* Selys, p. 384. (a) 3♂; (b) 0; (c) 1♂ Oct., '94.